

ABSTRACT OF THE DISCLOSURE

A chemiluminescent assay to determine the presence and/or amount of one or more labeled target molecules in a sample is described in which the surface layer of a solid support is contacted with a composition comprising first and second

5 chemiluminescent substrates capable of being activated by first and second enzymes, respectively. A plurality of probes are disposed on the surface layer in discrete areas. At least some of the probes are bound to a first enzyme conjugate comprising the first enzyme and at least some of the probes are bound to a second enzyme conjugate comprising the second enzyme. The resulting chemiluminescent

10 signals are then detected. The method can be used to compare two biological samples (e.g., mRNA populations from different cells) on the same support surface or to provide a chemiluminescent control signal for normalizing chemiluminescent assay data from a biological sample.